State of California

State Water Resources Control Board

and the

*Regional Water Quality Control Boards
Template for*

*Municipal Separate Storm Sewer System (MS4)
Permits*

Executive Summary

(Abridged)

4ᵗʰ Draft – September 24, 2012

Executive Summary

The Clean Water Act National Pollutant Discharge Elimination System (NPDES) program was amended in 1987, in part, to minimize the significant impacts of pollutants in stormwater runoff on Waters of the United States. The 1987 amendments require NPDES permits for urban runoff from municipal separate storm sewer systems (MS4s) and for stormwater runoff from most industrial activities, including construction. The owners and or the operators of the large and medium sized MS4 systems were required to obtain permits. In 1990, designated small MS4s and other non-traditional storm sewer operators were also required to obtain NPDES permits for stormwater runoff. These permits are issued by the Regional Water Quality Control Boards (Regional Boards) and/or the State Water Resources Control Board (State Board) [collectively the Water Boards] in California.

As the stormwater program developed, the MS4 permittees and the Water Boards have been challenged by the difficulties of regulating and managing municipal stormwater from diverse sources entering the MS4 systems. Even after two decades under the NPDES program, MS4 Permittees have been particularly challenged to show that current MS4 Permits are producing water quality improvements and this, in turn, has placed pressure on the Regional Boards to include increasingly more prescriptive requirements to protect the beneficial uses of all waters.

These challenges, combined with a lack of a centralized state policy for managing stormwater, have resulted in a permitting system that many perceive as having inconsistencies and varying levels of prescriptiveness. MS4 permittees cite the prescriptive nature of the MS4 permits as a reason for their inability to prioritize resources towards achievable water quality outcomes, to allocate resources towards experimental management approaches and to pool resources and knowledge at a regional or statewide level, as significant roadblocks towards effective permit compliance programs.

The Water Boards and the MS4 Permittees also cite the Permit reissuance process as an additional burden due to the lengthy permit negotiations and adoption process without a clear and consistent statewide guidance. MS4 Permittees often noted that the MS4 renewal process relies heavily on stakeholder input in the absence of such statewide guidance and underemphasizes Permittee input to varying degrees. Permittees often cite the lack of cost considerations and appropriate scheduling in the development of permits. These issues have also hindered swift permit adoption processes thereby imposing a tremendous burden on Water Board staff and the permittees and a significant drain on the resources needed to implement the stormwater program.

Several of these deficiencies were highlighted in the January 2009 Little Hoover Commission report called _Clearer Structure, Cleaner Water: Improving Performance and Outcomes at the State Water Boards_. Specifically, the Commission found that the current system creates stormwater permits that lack consistency. The Commission also expressed concerns that the current permitting system was unable to match resources to priorities.

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On July 20th, 2011, after informal discussions with State Board staff, the California Stormwater Quality Association (CASQA) sent a formal request to the State Board asking for a dialogue to identify deficiencies in the current MS4 permitting program.

On August 29, 2011 CASQA Chair Scott Taylor and Executive Director Geoff Brosseau, met with upper management from the Water Boards to discuss the possibility of statewide guidance, templates or possibly even a statewide permit to better address inconsistencies in the MS4 permitting program. An agreement was reached among the attendees to form a Stormwater MS4 Consistency Working Group (Working Group) consisting of State Board staff, Regional Board Executive Officers (or designated alternates) and CASQA Board Members. The group would convene up to 6 times, beginning in November 2011 and ending in January 2012. The initial purpose of the Working Group was to dialogue towards a shared vision and common purpose to address issues in the CASQA letter. If the meetings were deemed productive, future meetings would be considered.

At the request of State staff, CASQA developed a list of issues to assist in kicking off Working Group discussions in November (See Attachment 3, CASQA MS4 Permitting Issues List; September 25, 2011). By January 2012, the Working Group had coalesced around the common purpose of developing an MS4 Permit Template that would develop Permit language where possible, and alternatively program guidance. The Working Group also established a shared vision for the template:

1. *The Template should focus on water quality outcomes rather than methods;*

2. *The Template should promote the development of statewide or regional guidance where feasible;*

3. *The Template should allow for the prioritization of water quality problems;*

4. *The Template should promote integrated water resource approaches; and*

5. *The Template should reduce permit development costs for the Water Boards and the MS4 Permittees.*

The common goal and shared vision also addressed some of the recommendations contained in the 2009 Little Hoover Commission Report (paraphrased):

1) A move towards a governance structure that allows for both statewide policy and local flexibility; and
2) Increased focus on clean water outcomes and emphasis on collaboration, creativity and problem solving to address current water quality problems.

A revised meeting schedule and process was developed to facilitate the MS4 Permit Template development process. Nine additional Work Group meetings were scheduled for February through August 2012. A Sub-Work Group was also formed to independently meet to develop the Template text. The process used for developing the Template is summarized below:

1) The Work Group met to discuss individual permit elements (e.g. legal authority, development, construction oversight, etc.), develop a shared understanding and set guiding principles for the element.

2) The Sub-Work Group used the guiding principles to develop template language through teleconference. Subject matter experts would be invited to attend Sub-Work Group phone conferences when appropriate and as necessary to assist with template development.

3) The Sub-Work Group template language was presented at a subsequent Working Group meeting for further discussion and refinement.

4) The Sub-Work Group finalized the language and incorporated it into the master Template.

Typically, Working Group meetings were split into two sessions. The morning session would focus on developing shared understanding and guiding principles for a new Template element. The afternoon session would focus on the review of Sub-Work Group products.

Although a substantial amount of progress was made during this period, the schedule was aggressive. The resulting Template captures the intent of the Working Group guiding principles, but additional work is still required to refine text and, in some cases, further refine the guiding principles based on subsequent template text discussions. Attachment 4 summarizes the shared understanding and guiding principles that were developed for each program element. Additionally, the blue highlighted text at the introduction of each Permit Template element provides context for how that element should be interpreted with regard to its completeness.

Should this effort continue to move forward, the next steps will be to focus on refining the Template to ensure it properly captures shared understanding and guiding principles. In some cases, the Template elements may move closer to permit language. In other cases, Template elements may be converted to permit writer guidance. It is likely that such an effort will also require dedicated consultant resources and staff time.

Attachment 4 – Guiding Principles

Overarching Shared Understanding and Guiding Principles

- Permit Policy
    - Permits should be water quality based
    - Need to recognize that water quality improvement may take several permit terms.
    - Permits need to allow prioritization to achieve the most important water quality outcomes first.
    - Permittees need to be allowed to fail in order to facilitate innovation.
    - Permits should be simplified, but need to hold Permittees accountable. Language should be straightforward and easy to enforce.
    - Program elements should be scalable based on water quality need.
    - The role of the ROWD is unclear and needs to be better defined.
    - Retrofit is a tool in the toolbox, not an independent end.
    - Benefits of "True Source Control" need to be credited, encouraged, and facilitated in MS4 Permits.
- Regional Approaches
    - Presuming sufficient standardization, CASQA should develop statewide "tool boxes" for common pollutants/issues of concern.
    - State and Regional Board staff should consider coordinating experimental BMPs so that different regions try different approaches. This may accelerate the deployment of effective BMPs.
- Permit Design
    - Findings should be integrated into the Fact Sheet.
    - Statements of intent or policy belong in the Fact Sheet, not the Permit.
    - A standard template format should be developed for all MS4 Permits.

Prohibitions and Limitations

- Prohibitions – To be standardized by the State Board
- Receiving Water Limitations – Subject of a November 20, 2012 State Board hearing.
- Compliance with Receiving Water Limitations – Subject of a November 20, 2012 State Board hearing.
- Effluent Limits - See TMDL incorporation into stormwater permits

TMDL incorporation into stormwater permits

- Implementation Plan – Before incorporating a TMDL WLA into a permit, an Implementation Plan should be developed. If an Implementation Plan is not available before incorporation, the permit should include a provision requiring the development of an Implementation Plan.

- Knowledge / performance review – A review of knowledge and performance of control measures for the pollutant of concern should be conducted to determine which, if any of

the measures are a best management practice (BMP) for the pollutant of concern (i.e., will achieve significant reductions) and to categorize the status of each measure as either: 1) experimental, 2) pilot-testing, 3) focused implementation, or 4) full implementation.

- Information-driven implementation – The actions required under the permit should be driven by the status of each control measure. For a control measure that is experimental, actions should generally focus on research, and if the research shows promise, require further research and development of that control measure. If a measure is known to be a BMP for the pollutant of concern, actions should generally focus on implementation to the degree supported by the information / research.

- Adaptive management – Given the generally high level of uncertainty with TMDL compliance schedules, WLAs, and control measure performance, the permit language should include regular adaptive management loops that occur on a set schedule to allow for review of the latest information, development of a new, more informed understanding, and adjustments as supported by the information.

- Wide net – Given stormwater quality management is a relatively young endeavor, there is much to learn, and it is rare when a control measure is so powerful, that one measure alone is sufficient to reduce a pollutant of concern to the WLA. Researchers, managers, and regulators should cast as wide a net as possible to capture and review as many control measures as possible. For example, if those faced with copper WLAs had restricted their review to only traditional source and treatment controls, they would not have identified by far the most significant and highest performing BMP – reformulating brake pads, let alone come close to having a chance to meet the WLAs.

- Multi-pollutant management – Most stormwater management programs are faced with reducing multiple pollutants of concern essentially simultaneously. Yet addressing them one-at-a-time or without consideration of the others, is not cost-effective. TMDLs should address all problems in a watershed rather than addressing them piecemeal. New regulations will be needed to implement this approach. Permit language, including schedules, should be designed to identify and take advantage of synergistic opportunities.

- Interim milestones – Meeting most stormwater WLAs will take years. Permits should include interim milestones to act as prompts for early actions and check-in points, likely tied to the regular adaptive management loops.

- Multiple performance measures – Given the difficulty of measuring reductions in a natural, open system like stormwater runoff, permits should be designed to provide multiple measures of performance for attaining WLAs (e.g., loads reduced before discharge, water quality of discharge, water quality of receiving water). The meaningfulness of the measures should be equivalent.

- There is a limit as to how far local or operational source control (e.g., good housekeeping) and treatment BMPs will carry the program. Ultimately, green chemistry principles[1] should be used to address water quality impairments on a prioritized basis.

Watershed Plans

Goal: Promote integrated, watershed approach to managing water quality
- Watershed Plans may serve role in identification of areas where Regional BMPs are preferable to onsite
- Watershed Plans may serve as basis for alternative approaches to defined permit programs

Legal Authority and Enforcement

Goal: Ensure compliance with federal Clean Water Act requirements.
- Most Permits will be on their fifth term by the time this template takes effect. Adequate legal authorities are expected to exist and a basic recital of the federal regulations should be all that is necessary for this provision.

Illicit Discharges and Illegal Connections

Goal: Prevent Discharges to MS4
- This is a mature program element, which should require very basic language in permit
- Provide Permittees flexibility to prioritize responses
- Septic System discharges should be considered illicit discharge, no need for special provisions.

Construction Oversight Programs

Goal: To implement a program to manage construction site runoff from construction sites under the authority of the Permittee to the MS4.
- Inspection programs should be risk based
- Inspection program should look for same six minimum measures (pollutant tracking, materials management, vehicle storage, etc.) as construction permit
- Consider offering Permittees off ramp to change from requirement driven program to outcome driven program if Permittees are willing to submit to standardized reporting and future action levels based on collected data. May give the flexibility to reallocate resources.
- If Permittees are given flexibility to define program details, audit criteria may need to be defined to help Permittees understand what is expected and how success will be measured.
- The MS4 program should complement the General Permit program.

Industrial/Commercial Oversight Programs

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[1] Green chemistry consists of chemicals and chemical processes designed to reduce or eliminate negative environmental impacts. The use and production of these chemicals may involve reduced waste products, non-toxic components, and improved efficiency (USEPA, 2011).

Goal: Prevent Discharges to MS4
- Permittees should determine inspection "list" based on threat to water quality
- Inspection Frequencies should be based on threat to water quality
  - TMDLs, 303(d) listed parameters may drive "high threat"
- The MS4 program should complement the General Permit program
- See Guiding Principles regarding oversight program flexibility on Construction Oversight Program

Third-Party and Self – Certification Programs

Goal: Allow the Permittees the flexibility to achieve Permit requirements in a way that maximizes benefits and minimizes administrative burden.
- Self-certification and third party certification programs may be appropriate for industrial, commercial, construction and post-construction BMP inspection programs
- Permittees would need to audit self-certifications
- Need viable "licensing"/penalty program for third-party certifications, possibly QSD/QSP based
- Certification surveys could be standardized to promote effectiveness assessments and provide data on programmatic areas of deficiency.

Permittee Development Programs

Goal: To ensure discharges to receiving waters meet the MEP standard

- General
  - Development language needs to be revised due to the accumulation of requirements, terminology and procedures from policy changes over past permit terms. Need to standardize terminology and triggers to facilitate increased understanding and opportunities for regional/statewide guidance.
    - Treatment Control Trigger should be simplified – 5,000 sq. ft. impervious area
    - Alternative approaches to address
      - Individual single family homes,
      - Roads (green streets),
      - Other categories that may have challenges complying with post-construction requirements.
- LID
  - To simplify permits, LID BMPs should be considered another form of post-construction BMP, not a separate category of BMP.
  - Biofiltration needs to be considered as a second tier BMP below retention, but above other forms of treatment control. Standard criteria for biofiltration may be necessary to ensure adequate BMP.
  - Prioritize green infrastructure over grey infrastructure

- Hydromodification
  - LID requirements may meet hydromodification requirements in some cases
  - Hydromodification not otherwise extensively discussed due to technical complexity.
- Retrofit and Redevelopment
  - Retrofit is a tool in the toolbox, not an independent end. Implementation of retrofit projects driven by TMDLs, other water quality drivers.

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- Smart Growth projects should be incentivized (i.e. given credits against LID criteria), but not given a "free pass"

- Regional BMPs
  - Onsite retention policy is appropriate, however need to allow for regional solutions where there is a water supply or water quality benefit.
  - Onsite vs. Regional tests should be effectiveness based, not feasibility based.
  - Regional Stormwater recharge projects should have a "streamlined" effectiveness test (i.e. if the project is in IRWMP, presumed to be as effective as onsite).
  - It may be appropriate to allow regional BMPs to be cited upstream, downstream or off-stream from a development project. Safety factors may need to be considered. Regulatory considerations may impact feasibility.

Permittee Facilities and Activities

Goal: Prevent discharges to the MS4
- Permittee facility and activity oversight should be risk based

Public Education and Outreach

Goal: An effective public education program that minimizes cost
- Public Education should start at state level and work down to local level
  - Standardized branding
  - Standardized messaging
  - Standardized terminology
- Public Outreach should only be conducted where it can effect change
- School outreach programs should also be coordinated at a statewide level by SWRCB
- Local public education programs need to define measurable outcomes
- Public education programs should partially be developed using social marketing techniques

Fiscal Resources

Goal: Comply with Federal Clean Water Act requirements
- This section should provide basic information regarding program funding levels so that Regional Board staff can determine if any major shifts in funding level have occurred year-to-year.

Monitoring

Goal: Inform program effectiveness assessments and program iteration
- Southern California Stormwater Monitoring Coalition questions are good but can be improved. Need to develop better focused questions for MS4 monitoring.
- Monitoring Program needs to define:
  - Quality
  - Usability / Utility (e.g. define purpose of data collection)
  - Accessibility
- Need to better integrate MS4 data with SWAMP collection efforts
- Regional Monitoring
  - Current industrial permit monitoring of questionable value

- Consider cash in lieu of data collection for industrial discharges
    - Use to fund regional monitoring
    - Allow MS4 to prioritize purpose of resource allocation
- Regional Monitoring requires coordination, funding for coordination

Guiding Principles – Reporting

- Scope / Design – The scope of the reporting function should be expanded to also include periodic presentations by permittees to the Water Board, and a regular, ongoing auditing program of permittees by Water Boards. Record keeping should be recognized as a distinct element, separate from reporting. The design of the reporting function should be adjusted to recognize and include the record keeping, presentation, and auditing elements, and those elements should be incorporated in ways that the elements are complementary and the benefits of each element are optimized. The organization of the elements should be viewed as (As "Reporting" is one element, this category may be better named "Evaluation"):
    - Record keeping
    - Reporting
        - Written (e.g., annual reports)
        - Oral (e.g., presentations)
    - Auditing

- Purpose – Reporting (written and oral) / Auditing should provide information to assist Water Boards to determine compliance with permits as well as to assist stormwater quality program managers to adaptively manage their programs.

- Focus – Reporting (written and oral) / Auditing should be focused on providing information on stormwater management programs effect on water quality and to the extent that is not possible, reporting (written and oral) / auditing should be focused on providing information on indicators of progress on water quality.

- Streamlined – Given the significant resources that can be spent on reporting by both permittees and Water Boards, reporting should be streamlined. Reporting should be focused on providing only key and meaningful information in as summarized and consistent a way as possible.

- Requirements – Reporting requirements should be designed in a way that distinguishes between good and bad performance, creates separate regulatory pathways for each, and incentivizes good performance via streamlined or reduced reporting.

- Timing – Reports should be due and review feedback should be provided on schedules that maximize the timeliness of their use in the adaptive management loop.

- Content – All information reported should be tied to a pre-identified and defined management question and a use for that information. Information for which there is no pre-identified and defined management question and use should not be required to be reported.

- Outputs → Outcomes – Reporting of outcomes (i.e., achievements, levels 2-6 of the Effectiveness Assessment system) should be encouraged and incentivized over continued

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reporting of outputs (i.e., effort, level 1 of the Effectiveness Assessment system). Incentives should include the ability to pilot test outcome reporting with the results not subject to a compliance determination.

- Frequency – The frequency of reporting information should be dictated by when the information is necessary to answer the management question and when it would be ready for the intended use—to make/take a better or new/different decision/action. Therefore, the frequency may often not be annual.

- Format – Reporting should use templates to promote standardization, consistency, summarization, ease of review, and timeliness of feedback. Prompts or questions in templates should be written to elicit answers that are as meaningful as possible relative to the management question and intended use of the information. Structure should allow for 'work needed' status to be reported along with planned actions to address deficiency.

- Provision design – Provisions should be organized and designed to recognize the place of reporting in the adaptive management process and thereby promote the adaptive management process. This should include linking reporting on a provision directly to the implementation requirements (i.e., reporting requirements should appear in each provision as opposed to a separate reporting provision). Similarly, each provision should include statements of the problem(s) and priority(ies) being addressed by that provision.

- Paper → Electronic – The permit should promote and facilitate the transition from paper-based to electronic-based recordkeeping and reporting.